

COMMUNITY RELATIONS PLAN
FOR THE
HANFORD FEDERAL FACILITY
AGREEMENT AND CONSENT ORDER

Prepared by:

**Washington State
Department of Ecology**

**United States
Environmental Protection Agency**

**United States
Department of Energy**

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**COMMUNITY RELATIONS PLAN
FOR THE
HANFORD FEDERAL FACILITY
BENTON COUNTY, WASHINGTON**

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1. INTRODUCTION

The United States Government has, since 1943, manufactured nuclear materials for the nation's defense programs at its Hanford Site in Benton County, Washington. The production of nuclear materials requires operating nuclear reactors and chemical processing plants that generate waste products. The wastes have been treated, stored, or disposed in a variety of ways at Hanford. Some of the wastes contain radioactive materials, some contain chemical materials, while a third category is a mixture of both radioactive and hazardous wastes (mixed wastes).

The U.S. Department of Energy (DOE), which operates the Hanford Site, has begun the cleanup of its waste sites. In addition, it is in the process of obtaining permits from the State of Washington and the U. S. Environmental Protection Agency (EPA) for the operation of active units at which hazardous wastes are treated, stored, or disposed. Certain units will be closed and, if wastes are left in place as part of the closure of a unit, post-closure monitoring and maintenance will be required.

Two regulatory agencies, EPA and the Washington Department of Ecology (Ecology), are overseeing the cleanup and permitting activities at Hanford. The agencies possess this oversight authority under three environmental laws: the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund"), the Resource Conservation and Recovery Act (RCRA), and the Washington State Hazardous Waste Management Act. Each law contains requirements for providing opportunities for the public to become involved in decisions regarding remedial or permitting activities.

Most remedial activities falling in the category of "cleanup" will be conducted under the authority of CERCLA or RCRA. Therefore, community relations activities will be conducted as required by those statutes. The cleanup activities will also meet the requirements of the National Environmental Policy Act (NEPA). Those community involvement activities required by NEPA will be conducted.

or (SEPA) check Mike Jensen for SEPA

All legal requirements for public involvement under these environmental laws are met by this Plan. In addition, because the three parties recognize the benefits of a thorough public involvement program, they have added additional opportunities for members of the community to participate in the decision-making process at Hanford. Activities described in the Plan have been developed to meet three objectives, which are to:

- Present understandable and consistent information to the public;
- Assist in establishing two-way communication between the three parties and the affected or interested communities; and
- Provide opportunities for the public to become involved in the decision-making processes for permitting, closure, and the selection of remedial alternatives.

The Plan lists specific community relations activities that the three parties will conduct during the cleanup and permitting at Hanford. It also lists contacts at each of the three parties who are available to answer questions and provide necessary information. In addition, the Plan describes the Site background, history of community involvement, and community concerns regarding Hanford. Portions of the Plan are based upon discussions conducted in May and June of 1988 with the following individuals or representatives of groups and agencies:

- Community members in the Tri-Cities (Richland, Kennewick, and Pasco, Washington) area;
- Community organizations in Washington and Oregon;
- Businesses located in the Tri-Cities area;
- Elected officials in the Tri-Cities area;
- Northwest Congressional Delegation;
- Native American Tribes;
- Washington State Legislators;
- Washington Department of Ecology;
- U.S. Environmental Protection Agency; and
- State and local agencies in Washington and Oregon.

Appendix C lists those interviewed for this Community Relations Plan, and Appendix D summarizes the issues discussed during the interviews.

The three parties recognize that the cleanup of Hanford will be unusually complex. Hanford covers 560 square miles and, at various times during its 46-year history, nine production reactors, seven major processing facilities, and other support facilities have been in operation. Some wastes are stored in 177 underground tanks, while other liquids and solid wastes have been disposed to the ground. In addition to the vast nature of the Site and the existence of multiple contaminated units, compliance with the environmental laws will require extensive integration and planning. The three parties have recognized the need for a fully integrated approach and have entered into the Hanford Federal Facility Agreement and Consent Order, which is supported by an Action Plan. Together, these documents describe each party's roles and responsibilities. This same integrated approach has been applied to this Plan, and to the activities it describes.

Each of the parties has designated a contact office for the Hanford hazardous waste community involvement program:

Public Information Manager
Nuclear and Mixed Waste
Office
Washington Dept. of Ecology
Mail Stop PV-11
Olympia, WA 98504-8711
(206) 459-6670

Community Relations
Coordinator - Hanford
U.S. EPA, HW-112
1200 6th Avenue
Seattle, WA 98101
(206) 442-1099

Office of
Communications
U.S. DOE
P.O. Box 550
Richland, WA 99352
(509) 376-7501

Anyone wishing to discuss community relations activities or concerns related to Hanford cleanup and permitting, or to be placed on the mailing list, is encouraged to contact any of these offices. Individuals currently assigned to these offices are identified in Appendix E of the Action Plan.

Finally, EPA, Ecology, and DOE view this plan as a working document. The three parties will periodically review the plan, and will update the information or activities as necessary to address changes in the public's concerns and information needs.

2. **HIGHLIGHTS OF THE COMMUNITY RELATIONS PROGRAM AT THE HANFORD FACILITY**

Cleanup activities regulated by CERCLA, RCRA 3004(u), and permitting and closure activities regulated by RCRA and the State Hazardous Waste Act will occur simultaneously at Hanford. Therefore, DOE, EPA, and Ecology will conduct community relations activities that will provide the public with opportunities to become informed about and involved in all of the hazardous waste management activities at Hanford. This section describes the community involvement activities that DOE, EPA, and Ecology will conduct at Hanford.

The community relations program will provide the public with timely and accurate information about cleanup, permitting, and closure activities at Hanford. The activities presented below have been selected, in part, to attempt to respond to some of the interests and concerns that were expressed during community assessment interviews conducted in May and June, 1988. The activities also will encourage communication between the interested public and DOE, EPA, and Ecology throughout the course of remedial and permitting activities at Hanford. The community relations program will be evaluated regularly and altered as necessary to accommodate changes in information needs and applicable state and federal regulations that may arise. The activities described below will include involvement and coordination by all three parties.

The Hanford community relations program will be sensitive to the complexity of issues surrounding the Hanford Site and to the many different groups and communities affected by Site activities. It will be necessary to use a variety of communication techniques and methods to reach the large number of people interested in the site.

a. Public Meetings and Hearings. The public will have the opportunity to discuss Site activities at public meetings and, in some circumstances following specific requests, at public hearings. Those opportunities are discussed below.

- Quarterly Public Information Meetings. These meetings will serve to discuss upcoming activities and those that have taken place in the previous quarter. They will be conducted by EPA and Ecology, with assistance from DOE when requested. The quarterly meetings will be informal, providing an opportunity for information exchange between the agencies and the public. They will cover significant issues pertaining to CERCLA, RCRA, or State and federal hazardous waste permitting and closure activities.

During the first year of the community relations program at Hanford, each of the quarterly meetings will be held in Richland and in one other location. Those locations are the Seattle area, the Spokane area, the Portland-Vancouver area, and the Yakima area. At the end of the first year's meetings, the three parties will evaluate the locations of the meetings and determine if changes in the locations or schedules should be made.

- Other Public Meetings. Additional public meetings will be scheduled on an as-needed basis, as determined by EPA and Ecology. Additional public meetings may be scheduled to address complex issues, actions or decisions of extreme environmental significance, or issues of great concern to the public. At least one public meeting will be held during the public comment periods for each CERCLA Feasibility Study Phase III Report and Proposed Plan, and each RCRA Proposed Plan and Corrective Measures Study Report.

- State Nuclear Waste Advisory Council. This 19-member Advisory Council was established during the 1989 legislative session in order to: (1) advise, counsel, and make recommendations to the Department of Ecology on all aspects of radioactive waste management (including cleanup); and (2) advise the Department of Ecology on methods for maximizing effective public input and involvement.

Advisory Council membership consists of 11 governor-appointed citizen representatives and eight appointed legislators. Council administrative and technical support is provided by Ecology staff members.

Ecology, EPA, and DOE will provide the Council with information detailing cleanup and compliance activities, including proposed annual revisions to the Agreement and the Community Relations Plan. Council members will be requested to provide comment and to advise Ecology regarding Hanford cleanup, compliance, and public involvement efforts. Council members will be invited to attend the quarterly public information meetings and any other public meetings that might be held.

- Public Hearings. Draft permits and all modifications are subject to public hearings upon request. A public hearing will be scheduled if any person requests one in writing. The request must state the nature of the issues to be raised at the hearing and must include a notice of opposition to the draft permit. A public hearing will be held in the area from which the majority of requests for the hearing are generated. A public hearing may be held at more than one location, at the discretion of EPA and Ecology. Public hearings or additional public meetings may be held on the same day and in the same location as the quarterly meetings, but will be conducted separately.

The public will be informed of the meetings and hearings in a number of ways. These will include a public notice in a newspaper of general circulation and an announcement on a major radio station in the area where the meeting is to be held. They may also include notice in publications about cleanup activities published by the three parties, press releases, public service announcements, and direct mail notification to community members on the Hanford mailing list. Civic, environmental, and trade groups may also carry the information in their newsletters.

b. Informal Meetings/Presentations. The three parties will, when possible, provide speakers for group meetings and forums. Each request will be evaluated individually within the constraints of budget and the availability of individuals capable of addressing Hanford's hazardous waste activities. DOE does have an existing Hanford Speakers Bureau, and individuals from the Bureau with backgrounds in Hanford's hazardous waste activities will be available to speak to civic groups and other organizations. Speakers from Ecology and EPA also will be available. Requests for speakers should be addressed to one of the offices listed on page two of this Plan.

c. Public Comment Opportunities. The public will have the opportunity to submit comments on Site-related documents to the regulatory agencies during public comment periods (see Table 1 for a listing of all public comment opportunities). As required by both federal and state regulations, official public comment periods will be held upon the release of draft documents describing proposed cleanup or permitting plans. During those comment periods, the public may submit written comments to EPA or Ecology, depending on which agency has been designated as the lead agency for the permitting,

closure, or cleanup activity in question. That agency will respond to the comments. The draft documents, public comments, agency responses, and final documents will be made available for public review in four information repositories established for Hanford (see section g for the locations of the repositories).

d. Information for Elected and Appointed Officials and Agency Representatives. The public can obtain information about the Site through elected and appointed officials. These individuals are often the most likely people to receive inquiries from community members when new information is released. Therefore, elected and appointed officials and agency representatives will be kept informed about issues surrounding the cleanup. Keeping these individuals properly informed will help achieve the objective of increasing public understanding of the issues at Hanford and, at the same time, will help prevent incorrect or misleading information from being communicated to the community. This will be accomplished through timely responses to questions, notifications of significant findings, and annual briefings.

TABLE 1
PUBLIC COMMENT OPPORTUNITIES *

Action	Focus	Public Comment Opportunity
1. DOE, EPA, and Ecology finalize Hanford Federal Facility Agreement and Consent Order, Community Relations Plan, and Action Plan.	<ul style="list-style-type: none"> • Roles of EPA, Ecology, and DOE • Work priorities for FY 1989 • RCRA-Superfund interface • How EPA, Ecology, and DOE will provide opportunities for public involvement. 	<ul style="list-style-type: none"> • Documents available for public review • 45-day public comment period • Public meeting opportunities
2. DOE, EPA, and Ecology issue annual updates and major revisions to Action Plan and Community Relations Plan.	<ul style="list-style-type: none"> • Adjusted work priorities for later years • Revisions to community relations program to meet changing information needs 	<ul style="list-style-type: none"> • Documents available for public review • 30-day public comment period • Public meeting opportunities
3. Lead agency (EPA or Ecology) approves RI/FS Workplan (or RFI/CMS Workplan) for each operable unit.	<ul style="list-style-type: none"> • Scope of investigation of contamination • What cleanup alternatives will be studied 	<ul style="list-style-type: none"> • Documents available for public review • 30-day public comment period
4. Lead agency (EPA, Ecology, or DOE) initiates Interim Response Action.	<ul style="list-style-type: none"> • What kind of immediate cleanup should be done 	<ul style="list-style-type: none"> • Proposed remedy available for public review • 15- or 30-day public comment period
5. Lead agency finalizes FS Phase III Report and proposed plan (or CMS Report) for each operable unit.	<ul style="list-style-type: none"> • Results of site investigation • What next step will be 	<ul style="list-style-type: none"> • Documents available for public review • 45-day public comment period • Public meeting(s) will be held during public comment period
6. EPA and/or Ecology issues "completeness determination" of Part B permit application for each dangerous waste unit or group of units.	<ul style="list-style-type: none"> • Whether or not permit application contains sufficient information to draft permit conditions 	<ul style="list-style-type: none"> • Public meeting(s) as determined necessary by EPA and Ecology

* The above table describes public comment opportunities planned by the three agencies throughout the course of hazardous waste activities at Hanford. Others will be added as necessary and appropriate, in accordance with the requirements of CERCLA, RCRA, and the Washington State Hazardous Waste Management Law.

TABLE 1 (continued)
PUBLIC COMMENT OPPORTUNITIES *

Action	Focus	Public Comment Opportunity
7. EPA and/or Ecology issues Draft Joint Permit and fact sheet for each dangerous waste unit or group of units. (Note: Draft determinations could be for permit denial or issuance.)	<ul style="list-style-type: none"> Draft permit conditions are proposed for comment 	<ul style="list-style-type: none"> Documents available for public review 45-day public comment period Opportunity for formal public hearing if deemed necessary by Ecology or EPA, or if written public comments contain objections to draft permit conditions and hearing is requested
8. EPA and Ecology issue Final Joint Permit (including response to comments received on Draft Permit).	<ul style="list-style-type: none"> Final permit decision by Ecology and EPA 	<ul style="list-style-type: none"> Document available for public review Opportunity to appeal the final permit decision to Ecology and/or EPA within 30 days
9. Ecology approves Interim Status Closure Plan for each dangerous waste unit or group of units.	<ul style="list-style-type: none"> Whether Closure Plan meets regulatory requirements 	<ul style="list-style-type: none"> Documents available for public review 45-day public comment period

* The above table describes public comment opportunities planned by the three agencies throughout the course of hazardous waste activities at Hanford. Others will be added as necessary and appropriate, in accordance with the requirements of CERCLA, RCRA, and the Washington State Hazardous Waste Management Law.

e. Media Activities. The public can obtain information about the Site through the news media. The three parties will organize and conduct a variety of activities to keep the media informed about the hazardous waste activities, and will ensure that the media has access to information about Site activities. Activities to inform the media may include press releases, press conferences, background sessions, editorial boards, Hanford Site tours, invitations to public meetings, and individual contact with reporters. Members of the media with specific requests should direct their questions to the offices listed on page two of this Plan.

f. Publications. The public will receive information about Hanford activities from a variety of publications, including fact sheets, focus papers, summary documents, and a newsletter. The three parties will prepare publications on a regular basis. The purpose of the publications will be to inform the public of progress in the Superfund investigations and remediation, and the permitting and closure activities at Hanford. They will address ongoing issues, upcoming public meetings, and other community relations activities, as well as provide the names of persons whom the public can contact to obtain additional information. The publications will be sent to the information repositories, the media, and to individuals on the mailing list. All publications listed above will provide information on how to be placed on the Hanford mailing list.

g. Information Repositories. The public will have the opportunity to examine certain documents regarding Hanford hazardous waste activities at four information repositories. The three parties are committed to providing public access to this information as quickly as possible. Table 2 lists the primary documents that will be available for public review at the repositories. Repository locations will be reviewed periodically by the three parties, and additional repositories may be established or existing ones closed, depending on the level of use and interest. The locations of the four public information repositories are:

Department of Energy - Richland Operations
Public Reading Room
Federal Building, Room 157
825 Jadwin Avenue
Richland, WA 99352
(509) 376-8583

Spokane Public Library
906 Main Avenue
Spokane, WA 99201
(509) 838-3361

University of Washington
Suzzalo Library
FM-25 Gov't Publications
Seattle, WA 98195
(206) 543-4664

Portland State University Library
P.O. Box 1151
Corner of SW Harrison and SW Park
Portland, OR 97207
(503) 464-4617

h. Native American Tribe Involvement. EPA, Ecology, and DOE recognize the cultural and environmental significance of the Hanford Site to the Indian Tribes in the area. Therefore, the three parties have provided for an increased level of communication with Indian Tribes regarding the hazardous waste management and cleanup activities that will occur. Specifically, the following two activities will be conducted for those Tribes that indicate a desire for increased involvement:

- Periodic briefings will be conducted in the same manner as described for elected and appointed officials in section d. These briefings may be tailored to the needs of the individual Tribe. The format of each briefing will be determined when the briefing is scheduled.

- Copies of those documents sent to the information repositories (see section g and Table 2) will be distributed to individual Tribes. In some cases, Tribes may wish to receive selected documents or documents related to specific topics. The extent of the documentation to be sent to each Tribe will be decided in discussions with the Tribe once it notifies the parties of its interest.

If a Tribe wishes to participate in this expanded communications program, it should contact one of the parties at the addresses shown on page two of this Plan. A representative of that agency will contact the Tribe to discuss the program.

i. Technical Assistance Grants. In April 1988, EPA implemented the Technical Assistance Grant (TAG) program. This program assists citizen groups in hiring a technical advisor to help them interpret and understand the technical materials produced at a Superfund site such as Hanford. The grant is for \$50,000 to last throughout the life of the Superfund project and requires a contribution of 35 percent in matching funds from the citizen group. The group's 35 percent match can be in the form of cash or in-kind services provided by the members. Because Hanford has four Superfund sites, four grants are available. EPA has produced a manual and two video tapes to assist citizen groups in applying for grants and to demonstrate the usefulness of a technical advisor. The tapes, manual, and grant applications are available by contacting:

TAG Coordinator
U.S. Environmental Protection Agency
1200 6th Ave. HW-113
Seattle, WA 98101
(206) 442-0603

j. Washington State Public Participation Grants. The primary purpose of Washington State grants is to facilitate active participation by persons and citizen groups in the investigation and remedial action required due to releases or threatened releases of a hazardous substance. Grant amounts are limited to \$50,000, but may be renewed annually. This grant program is not yet in place. Ecology anticipates adopting emergency rules to implement the program in the Spring, 1989. More information can be obtained by contacting:

Public Participation Grant Coordinator
Solid and Hazardous Waste Program
Washington Department of Ecology
PV-11
Olympia, WA 98504
(206) 459-6000

TABLE 2 - LIST OF DOCUMENTS TO BE PLACED IN INFORMATION REPOSITORIES

- Consent Order and Federal Facility Agreement
- Action Plan
- Community Relations Plan
- Quarterly Progress Reports
- Hanford Operable Unit Reports
- Remedial Investigation/Feasibility Study and RCRA Facility Investigation/Corrective Measures Study Work Plans
- Feasibility Study and Corrective Measures Study Phase II Reports
- Remedial Investigation and RCRA Facility Investigation Phase II Reports
- Feasibility Study and Corrective Measures Study Phase III Reports
- Remedial Design and Corrective Measures Design Reports
- Remedial Action and Corrective Measures Implementation Work Plans
- Completion Notices
- Operations and Maintenance Plans
- Closure Plans
- RCRA Permits
- RCRA Permit Modifications
- RCRA Facility Assessment Reports
- Records of Decision
- Interim Response Action Proposals
- Meeting Summaries
- Hearing Transcripts
- Public Comments on Draft Documents and Responses
- Newsletters
- Fact Sheets
- Press Releases
- Responsiveness Summaries
- Agency for Toxic Substances and Disease Registry (ATSDR) Health Assessments
- Preliminary Natural Resource Survey
- Hanford Site Waste Management Units Reports

3. CALENDAR OF COMMUNITY RELATIONS ACTIVITIES

Activities called for in this plan began in June, 1989 with the first quarterly meetings, held in Richland and Seattle, and the first public comment period on a Remedial Investigation/Feasibility (RI/FS) Work Plan.

Future meetings will include a discussion of current and upcoming projects conducted under the agreement. Where possible, the quarterly meetings also will be scheduled to allow public discussion of proposed projects or plans that are available for public comment.

The approximate schedule and locations of quarterly meetings through fiscal year 1990 will be:

June 28-29, 1989	Richland and Seattle
September, 1989	Richland and Spokane
January, 1990	Richland and Portland-Vancouver
April, 1990	Richland and Yakima
July, 1990	Richland and Seattle
October, 1990	Richland and Spokane

The Hanford Update Newsletter will also be issued on a quarterly basis. It will provide information on the locations and agenda for the quarterly meetings, as well as information about cleanup and compliance activities. The newsletter will be mailed to everyone on the Hanford cleanup mailing list.

In addition to these scheduled quarterly meetings, the agencies also will hold additional public meetings on an "as-needed" basis. All meetings will be announced in a variety of ways, such as through direct mailings, news releases, and advertisements in daily newspapers in the cities where meetings will be held.

APPENDIX A SITE BACKGROUND

This Appendix describes the physical characteristics, history, and past and present activities at the Hanford Site. It is intended to acquaint the public with Hanford, its activities and its past practices in a general way and is not a complete listing of all that is known about the Site, its operations, or its waste management history. A more complete summary of operations and environmental status may be found in ERDA-1538, the Environmental Impact Statement on waste management operations, issued in 1975. More recent data on environmental contamination and groundwater plumes may be found in the annual Battelle Pacific Northwest Laboratory environmental monitoring reports, the latest of which is PNL-6464, dated May 1988. A brief description of the contamination problems of the four proposed Superfund sites at Hanford may be found in Appendix B.

A.1 Site Description

Hanford consists of 560 square miles of land along the Columbia River in southeastern Washington, situated north and west of the cities of Richland, Kennewick, and Pasco, an area commonly known as the Tri-Cities. Hanford is approximately 140 miles southwest of Spokane, Washington; 200 miles southeast of Seattle, Washington; and 200 miles northeast of Portland, Oregon. (Figure A-1 presents a site location map.) The Columbia River runs through the northern portions of the site, then turns south to form part of the eastern boundary. Hanford's southeastern boundary forms the northern border of the City of Richland.

The geologic structure beneath Hanford consists of three distinct levels of soil formations. The deepest level is a thick series of basalt flows that have been warped and folded, resulting in protrusions that crop out as rock ridges in some places. Layers of silt, gravel, and sand form the middle level. The uppermost level is known as the Hanford formation and consists of gravel and sands deposited by catastrophic floods during glacial retreat. Both confined and unconfined aquifers can be found beneath Hanford. Confined aquifers consist of water-saturated, porous material confined by impermeable layers of basalts, while unconfined aquifers consist of water-saturated, porous material located above the first confining basalt layer. The depth of the water table varies greatly beneath Hanford.

Semi-arid land with a sparse covering of cold desert shrubs and drought-resistant grasses dominates the Hanford landscape. Forty percent of the area's annual six and one quarter inches of rain occurs between November and January. The land surrounding Hanford is used primarily for agriculture and livestock grazing. The major population center near Hanford is the Tri-Cities, with a combined population of nearly 100,000. The southwestern area of Hanford, covering 120 square miles, is designated as the Arid Lands Ecology Reserve and is used by DOE for ecological research. The Washington State Department of Wildlife Wapinitia Wildlife Recreation Area and the Saddle Mountain National Wildlife Refuge also are located on the Site. Non-DOE facilities within Hanford boundaries include three Washington Public Power Supply System (WPPSS) Nuclear Plants (the operating WNP-2 and the partially complete WNP-1 and WNP-4) in addition to the Hanford Generating Facility that used N Reactor steam to create power. Also, a low-level radioactive waste disposal facility is operated by US Ecology, a private firm that is licensed by the State of Washington.

DOE facilities are located throughout the Site and the City of Richland. Hanford is divided into six administrative areas, known as the 100, 200, 300, 400, 600, and 1100 areas. The first four areas contain most of the operations at Hanford. The 100 Area includes the N Reactor and eight deactivated production reactors along the northern stretch of the Columbia River. The 200 East and West Areas,

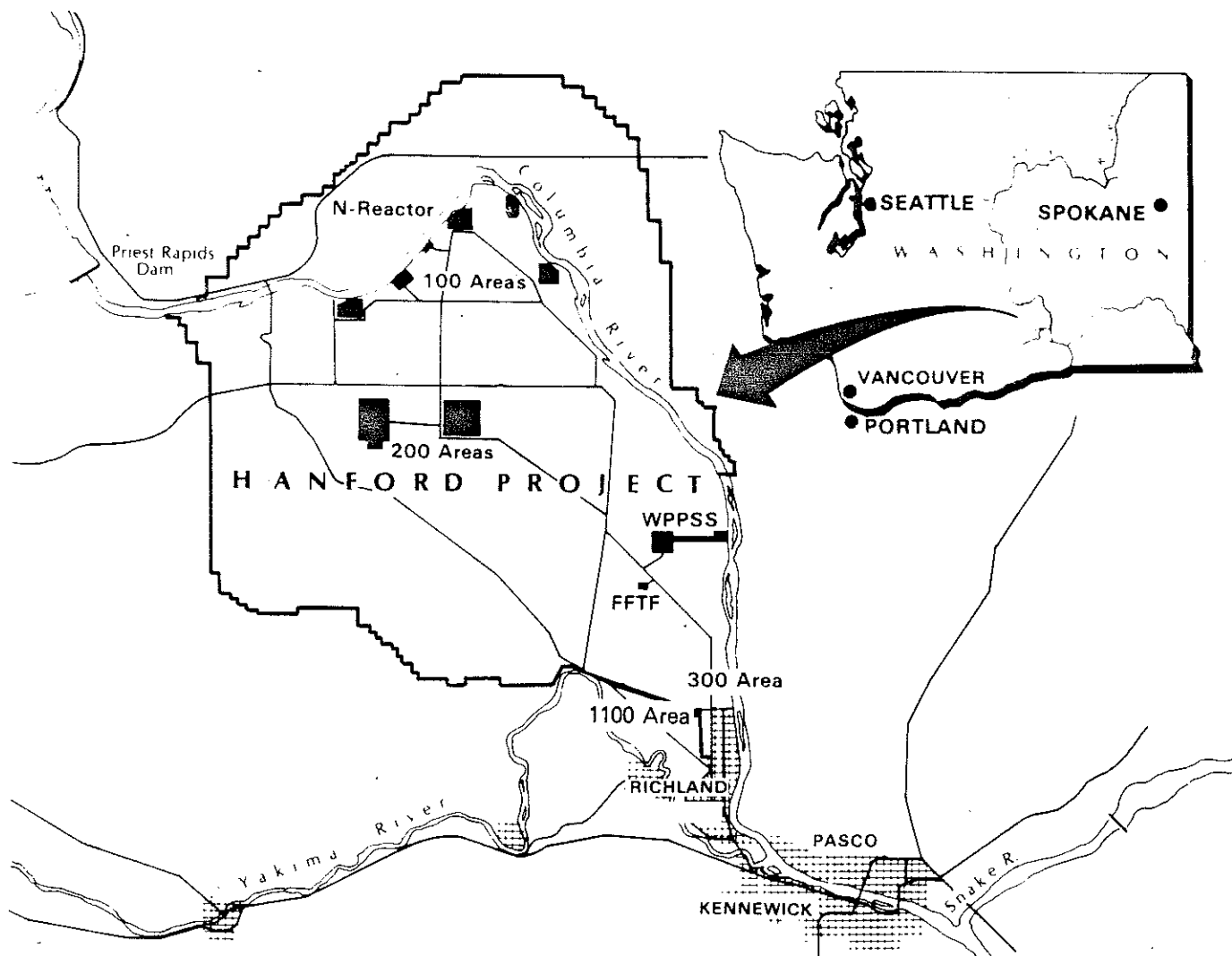


Figure A - 1

located in the central part of Hanford, contain the principal chemical processing and waste management facilities. The 300 Area, located approximately three miles north of the City of Richland, contains research and development laboratories and the reactor fuel manufacturing facilities. The Fast Flux Test Facility (FFTF) is located in the 400 Area, which lies northwest of the 300 Area. The 600 Area covers Site lands that are not part of any other administrative area. The 1100 Area, located adjacent to the Richland city limits, contains vehicle maintenance and storage facilities.

A.2. Site History

The land comprising the Hanford Site was originally inhabited by Native Americans, primarily the Yakima and Umatilla Tribes; it was also used by the Nez Perce, Walla Walla, and Cayuse Tribes. In 1855, these Tribes signed treaties with the United States under which the majority of their Territory was ceded to the federal government. Four reservations were established by the federal government for the Tribes; however, the Tribes reserved certain rights in the ceded lands: to take fish in all streams within or adjacent to the Territory and at all usual and accustomed places; to erect temporary buildings for curing fish; to hunt; to gather roots and berries; and to graze their horses and cattle on the Territory. Parts of the Site were settled by white people, and irrigated orchards, farms, and ranches were present prior to World War II. Approximately 6,000 acres were used to grow peaches, pears, grapes, asparagus, and other agricultural products.

Hanford operations began in January 1943, when it was chosen by the Manhattan District of the Army Corps of Engineers as the site for the highly secret Manhattan Project, which was to produce plutonium for the world's first nuclear weapons. Hanford was considered to be the ideal site for the Manhattan Project for several reasons: 1) its remote location; 2) access to railroad systems; 3) the abundance of water from the Columbia River for cooling the reactors; and 4) the abundance of hydroelectric power from dams on the Columbia River. About 1,500 people who were living within the Site boundaries were relocated and their property was condemned.

In September 1944, with the operation of B Reactor in the 100 Area, the Department of Defense began producing materials to be used in nuclear weapons. Within a few months, B Reactor startup was followed by the startup of the D and F Reactors. These three reactors produced the plutonium essential for the creation of nuclear weapons.

Between 1959 and 1963, N Reactor was constructed. By 1964, a total of nine reactors were producing plutonium at Hanford. In 1966, WPPSS built a power generating facility next to the N Reactor. In addition to the reactors, operations at Hanford included other elements of the nuclear fuel cycle: fuel fabrication, chemical processing, waste management, and research and development facilities.

The development of Hanford's plutonium production capacity resulted in the growth of the area surrounding the Site. In the months following initial construction on the Site in 1943, more than 50,000 construction workers moved to the Hanford area. Many of these workers later settled in the Tri-Cities, which became not only the fourth largest metropolitan area in the State of Washington, but also a new economic hub for the region.

Large releases of radioactive substances to the air and water occurred during the early operations of Hanford. The possible consequences of these releases are being studied in programs unrelated to the Hanford Federal Facility Agreement and Consent Order.

Eight of the nine plutonium production reactors were closed between 1964 and 1971 when the nation's plutonium needs diminished due to a shift in national defense policy. The Site gradually changed to emphasize peaceful uses of nuclear power, and research and investigation of the future uses of such energy sources as nuclear, solar, geothermal, fossil fuels, wind, and organic wastes. Hanford was chosen as the site for the FFTF advanced reactor in 1967. In the early 1980s, Hanford activities shifted again to re-emphasize defense production, with about 60 percent of Site funding used for national defense and 40 percent for energy research and related programs. Following the early 1988 decision by DOE to place N Reactor on cold standby status¹, plutonium production activities at Hanford are being curtailed.

A.3. Past and Present Operations at Hanford

Currently, DOE activities at Hanford include the following: support for defense programs; management of defense-generated radioactive and hazardous waste; development of advanced reactors; environmental research; research and development; and assistance to state and local energy programs. The activities that have been or are presently conducted at Hanford are described in the following sections, and are broken into Hanford's main operating areas.

100 Area

The 100 Area contains eight deactivated plutonium production reactors, and the N Reactor, which has been used to produce both plutonium and steam. The steam was converted into electrical power at the adjacent Hanford Generating Plant, which is owned and operated by WPPSS. The N Reactor went into operation in 1963 and was ordered to be placed in cold standby in February 1988.

All nine reactors were operating at one time in the 1960s, but only N Reactor has operated since 1971. The other eight reactors and their periods of operation are as follows: B Reactor, 1944-1968; D Reactor, 1944-1967; F Reactor, 1945-1965; DR Reactor, 1950-1964; H Reactor, 1949-1965; C Reactor, 1952-1969; KW Reactor, 1954-1970; and KE Reactor, 1955-1971. Wastes and cooling water from the reactors were disposed in more than 100 trenches, cribs², ponds, and burial grounds in the 100 Area. The decontamination and decommissioning of these eight reactors is the subject of an environmental impact statement.

200 Areas

Hanford's chemical processing and defense waste management activities take place in the 200 East and West Areas. Since 1944, nuclear fuel irradiated in Hanford's 100 Area production reactors has been transported to the 200 Areas where it is chemically treated to remove and refine plutonium and uranium. This process produces radioactive, hazardous, and mixed (radioactive and hazardous) wastes, all of which have been stored or disposed in the 200 Areas. The 200 Areas contain 149 single-shell storage tanks, and 28 double-shell tanks with a capacity of up to one million gallons each, which store high-level and miscellaneous other liquid radioactive waste.

¹ Cold standby refers to a condition whereby the reactor is defueled and maintained in a state that will allow the reactor to be restarted, if necessary.

² A crib is an underground drainfield used for the discharge of low-level radioactive mixed liquid wastes.

Low-level radioactive solid wastes are disposed by burial in trenches, while low-level liquids are disposed in cribs. Another form of radioactive wastes called "transuranic wastes³," primarily plutonium-contaminated solid materials, have been stored underground on asphalt pads and in an indoor storage facility. They will ultimately be shipped to a deep geologic repository in New Mexico for final disposal.

As the science of chemically separating the needed isotopes from irradiated fuel evolved, several large facilities were used at Hanford for these processes:

- B Plant and T Plant. Processing of Hanford's reactor fuel from 1944 through 1956 was conducted at B Plant in the 200 East Area and T Plant in the 200 West Area. B Plant was later used to remove high heat-producing isotopes from the liquid waste in storage tanks, and today is being modified for its third mission, the separation of high- and low-level fractions of liquid wastes in preparation for final disposal. Since 1957, T Plant has been used as a decontamination and decommissioning facility for equipment used in the plants.
- REDOX and PUREX. In the 1950s, two new processes came into use at Hanford. Chemical processing was conducted at the Reduction Oxidation Plant (REDOX) in 200 West from 1951 through 1971, and at the Plutonium Uranium Extraction Plant (PUREX) in 200 East. PUREX opened in 1956, went into standby status in 1972, was re-started in 1983, and remains operating today.

Once plutonium and uranium are separated from irradiated fuel, they are sent to other Hanford facilities for further processing. Liquid material containing uranium goes to the Uranium Oxide Plant (UO_3) in the 200 West Area, where it is converted into a solid and sent off-site for recycling into reactor fuel. Liquid plutonium is either converted to plutonium oxide at PUREX or is transferred to the Plutonium Finishing Plant (PFP) in the 200 West Area. There, it is converted into plutonium oxide or plutonium metal for shipment to other DOE facilities. The PFP also recovers plutonium from scrap materials and serves as the storage, handling, and shipping facility for plutonium. Other facilities in the 200 Areas that have generated waste products are laboratories, fabrication shops, coal-powered steam plants, and a chemical processing pilot plant (the Hot Semi-works, currently being decontaminated and decommissioned).

300 Area

Facilities in the 300 Area have been used for the fabrication of reactor fuel, for research and development, and technical and service support functions. DOE contractors are involved in the research and development of fossil, solar, nuclear fission, and nuclear fusion energy. Research and development also takes place on environmental, biomedical, and materials studies, as well as on the encapsulation of liquid and solid wastes in glass.

³ Waste contaminated with long-lived transuranic elements in concentrations above limits established by DOE, EPA, and the Nuclear Regulatory Commission. Wastes containing concentrations below such limits are considered low-level radioactive waste. Transuranic elements are those shown above uranium on the chemistry periodic table, such as plutonium, americium, and neptunium.

This 300-acre area was developed in World War II and expanded later. Liquid wastes from operations in the 300 Area were at various times disposed in 14 ponds, trenches, and landfills. Among the 190 buildings in the 300 Area, the following are the significant programs and facilities that have housed major process operations and nuclear programs:

- Defense fuel fabrication activities have been centered in the 313, 314, and 333 Buildings since 1944, involving the preparation of uranium fuel elements for the nine production reactors.
- Fuel fabrication and test assembly fabrication activities in support of FFTF have been conducted in the 300 Area since the 1970s. Primary activities have included preparation of mixed-oxide fuels and components in the 308 Building, and non-radioactive FFTF component development in the 306 Building.
- Radiological chemistry laboratories and technology development activities performed in the 321, 324, 325, and 327 Buildings included a variety of activities involved in liquid metal reactor technology programs as well as other nuclear and waste management studies and scientific research.
- The 309 Building features a reactor containment area being modified to house the SP-100 space power testing program in the 1990s. It had been the site of the Plutonium Recycle Test Reactor, which operated in the late 1960s and was then decommissioned.
- Other notable 300 Area facilities include the 337 Building, which includes a high bay formerly used for FFTF component testing. The 331 Building is the Life Sciences Laboratory, which conducts a range of biological, biomedical, and environmental research programs. The 327 Building houses hot cells (heavily shielded rooms) used for research on highly radioactive materials.

400 Area

The 400 Area is the location of the Fast Flux Test Facility (FFTF), a liquid metal test reactor that began full-power operation in 1982. Initially, FFTF served as a test tool for advanced reactor technology. FFTF has expanded into other areas of research and development, such as fusion research, space power systems, isotope production and international research programs.

Adjacent to FFTF is the Fuels and Materials Examination Facility (FMEF). The FMEF was constructed in 1984 as a nuclear materials processing facility that is also outfitted with an automated fuel fabrication line. It has not yet been brought on line. The FMEF is being considered for a fabrication and assembly facility for radioisotopic thermoelectric generators for deep space missions, following construction of a chemical separation line in the mid-1990s.

Almost all liquid wastes generated by FFTF have been transported to 200 Area waste management locations. Several spills and non-radioactive liquid waste disposal facilities will be investigated to determine the need for remedial actions.

1100 Area

The 1100 Area is the location of maintenance and storage operations for Hanford. The maintenance facilities service all vehicles and equipment used throughout Hanford. The 1100 Area, which covers less than one square mile, has no disposal locations for radioactive or mixed wastes, but does contain several sites at which hazardous wastes were disposed. The area is located immediately adjacent to the Richland city limits and one-quarter of a mile from the Richland well field.

APPENDIX B

DESCRIPTION OF REGULATORY INVOLVEMENT AND SITE CONTAMINATION

This Appendix addresses the application of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to federal facilities and summarizes the primary contaminants identified in those areas to be regulated by CERCLA during the cleanup of Hanford. It also addresses the application of the Resource Conservation and Recovery Act (RCRA) and the State Dangerous Waste Program to facility cleanup, operation, and permitting.

B.1. Application of CERCLA to Federal Facilities

CERCLA, passed by Congress in 1980, taxes the chemical and petroleum industries to create a trust fund known as "Superfund." EPA uses Superfund money to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, EPA can either: 1) pay for site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work; or 2) take legal action to force the responsible parties to clean up the site or to pay for the cost of the cleanup after it has been conducted by EPA.

Initially, it was unclear how CERCLA requirements applied to federal facilities such as Hanford. In 1986, Congress passed the Superfund Amendments and Reauthorization Act (SARA), which amended CERCLA and included a stipulation that extended CERCLA to cover federal facilities. In addition, SARA stipulates that Superfund monies are not available to clean up federal facilities. Under SARA, EPA and the department or agency in charge of the federal facility must provide the opportunity for relevant State and local officials to participate in the planning and selection of remedial actions to be conducted at the facility. SARA strengthened CERCLA community relations requirements and provided for citizen suits to be brought against EPA if EPA fails to comply with the community relations requirements. Also, the President may issue Executive Orders to cease remedial actions in order to protect national security interests. This exemption may last no longer than one year, although additional Orders may be granted later.

The National Priorities List (NPL) is EPA's list of hazardous waste sites nationwide that have been identified for cleanup under the Superfund program. Sites are placed on the NPL if they score high enough on EPA's Hazard Ranking System (HRS), a scoring system used to evaluate potential risks to public health and the environment from releases or threatened releases of hazardous substances. The HRS score reflects the possibility of hazardous substances reaching populated areas through groundwater, surface water, or air, and allows EPA to compare the potential risks posed by different sites. It does not determine if cleanup of a site is possible or worthwhile, or the extent to which the site should be cleaned up.

Four Hanford areas were proposed for inclusion on the NPL in June 1988. These areas have been designated as the 100, 200, 300 and 1100 aggregate Areas (see Figure B-1). The 200 Area includes Hanford's 200 West and 200 East Administrative Areas. All disposal sites located at Hanford have been assigned to one of the aggregate areas. Remedial Investigations are scheduled to begin in 1989. Because Hanford is a federal facility operated by DOE, the Superfund cleanup will be conducted by DOE in cooperation with EPA and Ecology.

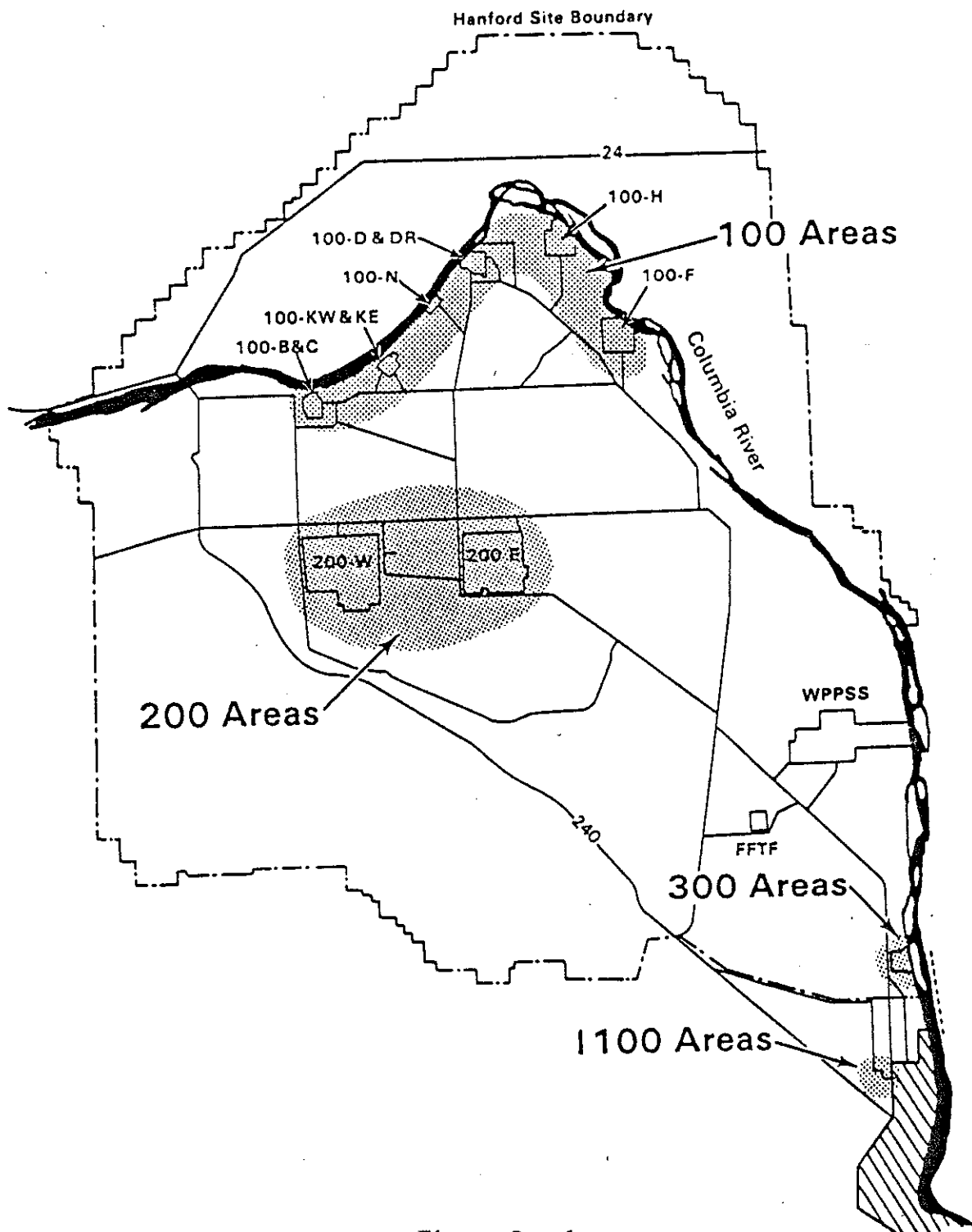


Figure B - 1

Throughout Hanford's history, waste products have been stored and disposed using a variety of disposal practices. In addition, unplanned releases of materials have contributed to contamination on the Site. The remainder of this section describes the primary contaminants identified by EPA in preparation of the HRS scoring packages, and the potential exposure pathways that could present risks to human health and the environment. The Remedial Investigation will determine if other contaminants that have been identified, or may later be identified, are of concern and require cleanup actions.

100 Area Contamination

The contamination in the 100 Area resulted primarily from the disposal of reactor coolant water. The primary contaminants are strontium-90, a radioactive isotope, and chromium, a metal. These could pose human or environmental threats through exposure to ground and surface water contaminated by these two substances. The 100 Area has approximately eleven square miles of waste disposal locations and contaminated groundwater.

Contamination in the 100 Area originated from cribs, trenches, and contaminated reactor cooling water that leaked through retention basins to the groundwater. The contaminants eventually flowed into the Columbia River. Retention basins were used from the 1940s through the early 1970s. During this period, unplanned releases of contaminated water also took place.

The possible pathways for human exposure to strontium-90 and chromium are through the use of water from the Columbia River for recreation, irrigation, manufacturing, or drinking. The Columbia River is a possible route of exposure since both surface and groundwater from the 100 Area flow toward the River; however, no wells within three miles of the 100 Area presently draw drinking water from the contaminated aquifer. Current releases are controlled under a National Pollutant Discharge Elimination System (NPDES) permit and DOE requirements that are comparable to NRC rules for releases from commercial reactors to surface waters. Monitoring results show that concentrations of radionuclides identified in the river are below drinking water standards set by EPA and the State of Washington.

200 Area Contamination

Groundwater samples taken between 1984 and 1987 in the 200 Area revealed that concentrations of tritium, radioactive isotopes of iodine, uranium, cyanide, and carbon tetrachloride had risen during that four-year period. Releases of tritium (the radioactive isotope of hydrogen) and radioactive isotopes of iodine resulted from chemical processing operations at REDOX and PUREX. The wastes containing these contaminants have been disposed in ponds, cribs, trenches, and reverse wells⁴. At the same time, uranium (a radioactive element and a product of UO₃ Plant operations), cyanide (an organic compound used to precipitate cesium during uranium recovery), and carbon tetrachloride (a chlorinated organic solvent used in the plutonium extraction process in the Plutonium Finishing Plant) wastes were disposed into soil columns.

Although uranium, cyanide, and carbon tetrachloride generally bind to the soil in the 200 Area, some of those three substances plus chromium and tritium can be found in large groundwater "plumes," or areas of contamination within the aquifer. The tritium plume, for example, extends east to the Columbia River. In total, the 200 Area contains 230 known disposal locations that generated 215

⁴ Reverse wells, also called injection wells, were used briefly in the 1940s at Hanford to inject wastes deep into the ground.

square miles of contaminated plumes. Potential pathways for human exposure to the contaminated groundwater are public and private wells and the Columbia River. Existing data suggest there is no current danger to the public from those sources.

300 Area Contamination

The main contaminant in the 300 Area is uranium, which resulted from fuel fabrication operations. As Hanford's 100 Area production reactors (except N Reactor) were shut down in the 1960s, fuel-manufacturing support activities from the 300 Area also declined. From 1944 to 1975, uranium-contaminated wastes were disposed in the north and south ponds (pools in which the movement of liquid wastes is restricted due to soil retention) and several trenches. At one time there were fourteen disposal locations in the 300 Area, which currently has approximately five square miles of radioactive contamination. Potential exposure pathways include wells in the North Richland area, the Columbia River, and an irrigation well used by Battelle Farm Operations. Existing data indicate there is no current danger to the public from those sources.

1100 Area Contamination

Contaminants in the 1100 Area are liquid battery acid containing lead and sulfuric acid, and ethylene glycol (antifreeze), both of which could potentially contaminate the groundwater beneath the 1100 Area. The lead and sulfuric acid (an inorganic acid) resulted from the disposal of batteries between 1954 and the 1970s. The batteries were brought from the 100 Area and placed in an unlined disposal pit west of the 1171 building. The ethylene glycol resulted from leaks of antifreeze stored in a 5,000-gallon underground tank beneath the 1171 building. The tank leaked between 1976 and 1978 and was removed from the ground in 1986.

Potential exposure pathways of concern for the contaminants in the 1100 Area are related to groundwater. These pathways include municipal water system recharge wells belonging to the City of Richland, located adjacent to the 1100 Area. The Battelle farm irrigation well is also located nearby. Quarterly samples of nine wells adjacent to the 1100 Area have yet to detect the above-mentioned contaminants. The area has been stabilized with an asphalt cover to prevent contaminants from being washed away by rain or being blown by winds.

B.2 Application of RCRA and the State Dangerous Waste Program to Federal Facilities.

The Hanford Site has been designated as a generator of hazardous waste in accordance with the State of Washington Hazardous Waste Management Act (commonly referred to as the State Dangerous Waste Program). In addition, the Hanford Site includes more than 50 treatment, storage and/or disposal (TSD) units that must be permitted and/or closed under the authority of the State Dangerous Waste Program and RCRA.

Currently Hanford's TSD units are being operated under interim status authority pending receipt of a final permit. Interim status was obtained through submittal of a Part A Permit application for the Hanford Site, which was recently updated to include mixed waste units in May 1988. Mixed waste units are those that have received both radioactive and hazardous components.

The majority of TSD units at Hanford contain mixed waste. They include radioactive mixed waste burial grounds, single- and double-shell storage tanks, ponds, cribs, ditches, and several treatment systems within processing plants such as PUREX. The liquid disposal units currently are not being used for disposal of mixed wastes and will be closed in the future. A number of future Hanford facilities will

also be regulated as TSD units. They include the Hanford Waste Vitrification Plant (HWVP), where liquid wastes will be processed for final disposal, and a central waste complex to treat mixed low-level and transuranic wastes for final disposal. New storage and disposal facilities, such as concrete vaults that hold solidified liquid wastes, will also be regulated under RCRA and the State Dangerous Waste Program.

APPENDIX C
LIST OF INDIVIDUALS INTERVIEWED FOR THE PREPARATION OF THIS PLAN

This Community Relations Plan is based on on-site interviews conducted by ICF Technology, a community relations consulting firm, in June 1988. The following people were interviewed:

Elected Officials:

Emily Barlow, Field Representative,
U.S. Senator Robert Packwood

Rebecca Barr, Mayor,
West Richland

Max Benitz, State Senator, 8th District,
Washington

Bernie Bottomly, Field Representative,
U.S. Representative Les AuCoin

Richard Brown, District Administrative Assistant,
U.S. Representative Ron Wyden

Merrie Buell, Field Representative,
U.S. Representative Ron Wyden

Bob Drake, Commissioner,
Benton County

Brad Fisher, Mayor,
City of Kennewick

Dave Gallick, Eastern Washington Director,
U.S. Senator Brock Adams

Janet Gilpatrick, Field Representative,
U.S. Representative Tom Foley

Bill Grant, State Representative, 16th District,
Washington

Shirley Hankins, State Representative, 8th District,
Washington

Jeanette Haynor, State Senator, 16th District,
Washington

Wayne Hogue, Mayor,
City of Prosser

Ray Isaacson, Commissioner,
Benton County

Jim Jesernig, State Representative, 8th District,
Washington

Phil Jones, Field Representative,
U.S. Senator Dan Evans

Ron Jones, Commissioner,
Benton County

Susan Long, Field Representative,
U.S. Senator Mark Hatfield

Herald Mathews, Commissioner,
Franklin County

Ken Miller, Commissioner,
Franklin County

Congressman Sid Morrison, 4th District,
Washington

John Poynor, Mayor,
City of Richland

Bruce Whitemarsh, Commissioner,
Franklin County

Bob Zufelt, Mayor,
Benton City

Agency Representatives:

Stan Arlt, Director,
City of Richland Department of Water and Waste Utilities

Mary Lou Blazek, Coordinator, Oregon Hanford Advisory Board,
Oregon Department of Energy

Herb Cahn, Health District Officer,
Benton-Franklin County Health Department

Larry Calkins, Technical Coordinator,
Nuclear Waste Study Program, Umatilla Tribe

Phyllis Clauson, Member,
Washington Nuclear Waste Advisory Council

Phil Cook, Director,
Tri-County Air Pollution Control Authority

Gary Crutchfield, Manager,
City of Pasco

Paul Day, Hanford Project Manager,
U.S. Environmental Protection Agency, Region X

Jerry Gilliland, Public Information and Involvement Manager,
Washington Department of Ecology

Ed Hendler, Manager,
City of Pasco

Russell Jim, Manager,
Yakima Indian Nation Nuclear Waste Program

Gary Karnofski, Senior Environmental Planner,
Benton-Franklin Governmental Conference

Jonathan Maas, Army Corps of Engineers

Ralph Menasco, City Administrator,
City of West Richland

Joe Painter, Manager,
City of Kennewick

Dave Rice, Archeologist,
U.S. Army Corps of Engineers

Claire Rowlett, Community Relations Coordinator,
U.S. Environmental Protection Agency, Region X

Bill Sanderson, Public Information Officer,
Oregon Hanford Waste Board, Oregon Department of Energy

Corrie Santrizos, Administrative Assistant,
Tri-County Air Pollution Control Authority

Neal Shulman, Manager,
City of West Richland

Walt Titus, Superintendent,
City of Prosser

Stan Vendetti, Environmental Health Director,
Benton-Franklin County Health Department

Community Organizations:

James Beard, Nuclear Fuel Cycle Campaigner,
Greenpeace

Nina Bell, Executive Director,
Northwest Environmental Advocates

Laura Berg, Public Information Services Manager,
Columbia Inter-Tribal Fish Commission

Leo Bowman, President,
Richland Chamber of Commerce

Mark Chapman, Associate Area Representative,
American Association of Retired Persons

Tim Connor, Research Director,
Hanford Education Action League (HEAL)

Joan Edwards, Lobby Coordinator and Energy Committee Chair,
Sierra Club

Michael Fox, President,
The Hanford Family

Beth Helstein, Fundraising Coordinator,
Toxic Waste Cleanup Campaign

Jackie Kling, Director,
Oregon Hanford Oversight Committee

Susan Kreid, Member,
League of Women Voters

Rob Lothrop, Policy Assistant,
Columbia Inter-Tribal Fish Commission

Lloyd Marbet, Director,
Forelaws on Board

Betty McArdle, Assistant to the Executive Director,
Oregon Environmental Council

Joel Merkel, Esquire,
Defense Waste Citizens Forum

Janet Miller, Assistant Director,
Puget Sound Sane

Margie Miller, President,
Richland Parent-Teachers Association (PTA)

Bill Mitchell, Director,
Northwest Nuclear Safety Campaign

David Ortman, Executive Director,
Friends of the Earth

Gerry Pollet, Executive Director,
Heart of America

Gordon Rogers, Executive Director,
Tri-Cities Technical Council

Mike Schwenk, Managing Director,
Tri-Cities Development Council

Greg Vine, Program Director,
Heart of America

Roger von Gohren, Director of Natural Resources,
Association of Washington Businesses

Businesses:

Ernie Boston, Real Estate Associates

Schools:

Marvin Weiss, President,
Columbia Basin College

Citizens:

A number of private citizens were also interviewed. Their names are not included to protect their privacy.

APPENDIX D COMMUNITY BACKGROUND

The populace potentially affected by and interested in remedial activities at the Hanford Site consists of several widespread geographic and socioeconomic groups, each of which has distinct concerns about Hanford. These groups include residents of the Tri-Cities area, environmental and peace organizations, Native American Tribes, and residents of the Pacific Northwest. To capture the broad range of perspectives on Hanford and the cleanup, more than 80 individuals representing different cities, states, agencies, and interest groups throughout Oregon and Washington were interviewed in the preparation of this Plan.

Their concerns about and involvement in Hanford are described below. The different perspectives are separated into the following categories: the Tri-Cities area, Native American Tribes, and Spokane and the western regions of Washington and Oregon.

D.1 Tri-Cities Area

Past Involvement

Residents of the Tri-Cities area have been involved in activities at Hanford since operations started during World War II, primarily because many Tri-Cities residents are or have been employed by DOE or one of its contractors at Hanford. Current Tri-Cities residents generally can be categorized in one of three groups with regard to their involvement at Hanford:

- People whose livelihood is directly related to Hanford;
- People whose daily activities bring them in contact with Hanford or with individuals who are employed at Hanford; and
- People who have little or no direct contact with Hanford or individuals who are employed at Hanford but who nonetheless are aware of the facility.

The public became more involved with activities related to Hanford after the Nuclear Waste Policy Act of 1982 placed Hanford under consideration as a possible location for the high-level nuclear waste repository (the Hanford program was known as the Basalt Waste Isolation Project, or BWIP). Formal mechanisms were developed by which the public throughout the region could express interest in activities related to Hanford. Some local elected and agency officials participated in studies to determine the best location within the Hanford Site for the repository. A small number of Tri-Cities community members have attended hearings regarding the proposed Federal Facility Agreement and Action Plan between DOE, EPA, and Ecology. In addition, a group of residents who live downwind of Hanford have expressed concern about health problems they believe may be associated with past atmospheric releases of radioactive materials from Hanford.

Another group involved in activities related to Hanford is TRIDEC, the Tri-City Industrial Development Council. TRIDEC is an economic development organization that promotes Hanford activities and also works to help the Tri-Cities diversify its economic base. For example, TRIDEC currently is working to promote business opportunities for the research and design portions of the hazardous waste industry, wherein hazardous waste technologies would be developed in the Tri-Cities area, tested at Hanford, and used at sites around the country.

In addition to organized groups, there is a wide range of individuals in the Tri-Cities area who are interested in activities at Hanford, although they do not affiliate with any particular organization. These people are likely to express opinions in letters to the Editor of the Tri-City Herald and western Washington newspapers, and through other forms of public commentary. Such individuals appear to be interested in promoting good government and good management within government. They are likely to espouse the viewpoint that they do not want Hanford closed; rather, they want to see Hanford managed better.

Issues of Concern

Interviews were conducted with approximately 40 individuals in the Tri-Cities area, including members of local governments, the business community, civic and special interest groups, educational institutions, and private citizens. Specific concerns that Tri-Cities community members have about Hanford are discussed below.

Economic Issues. Community members interviewed for this Plan mentioned a number of economic concerns that they relate to the region's heavy dependence both on Hanford and on agriculture. They also believe that the economic health of the Tri-Cities area both is affected by and affects the economy of the entire State of Washington and portions of Oregon.

The primary issue for those interviewed involves the economic future and, therefore, employment in the Tri-Cities area. To most individuals, this issue relates to employment at the present Hanford operations, potential employment resulting from a cleanup at Hanford, and indirect jobs resulting from Hanford's presence. Because of the layoffs caused by halting construction of Washington Nuclear Power (WNP) Reactors 1, 3, 4, and 5, the cold standby of N Reactor, the loss of BWIP, and the potential loss of funding for FFTF, many individuals interviewed were concerned that the Hanford cleanup should create jobs, and that these jobs be given to the local workforce rather than to an outside workforce. Related to this concern, some believed that the local economy could suffer if Tri-Cities residents who are trained for new jobs for the cleanup later relocated to an area where there might be a greater market for them. Several individuals expressed concern about the potential impacts to local services, such as schools and social services, that could result from a changing local economy.

Most of the Tri-Cities residents interviewed also expressed concern about two potential adverse economic impacts from misperceptions about Hanford. First, the perception that products from the area are in any way contaminated by Hanford could have a serious negative impact on the agricultural community, including the recently burgeoning wine industry. Second, new businesses might not locate in the Tri-Cities area if they believe that their products would suffer from this misperception.

Dependency of the local economy upon DOE and other federal projects has resulted in residents and local officials pursuing economic diversification, according to most people interviewed. Many Tri-Cities residents noted that new industry could be developed around hazardous waste cleanup techniques and technology, primarily because of the highly-educated and experienced local work force. These residents believe that funneling cleanup dollars into the Tri-Cities area would attract and expand this new industry, thereby creating local jobs and leading to numerous spin-off technologies. (Several interviewees suggested that establishing the region as a high-technology hazardous waste cleanup center might decrease pressure to convert WNP-1, a domestic power plant, to a military fuel production facility, a pressure they believe is based on the need to ensure future employment in the area.)

Other community members said that the Tri-Cities area, with close to 100,000 residents, comprises an important sector of the consumer economy of the Northwest. They stated that a downturn in the local economy would force many residents to leave the area and thus diminish the size of this consumer base. They believe that this shift in population could, in turn, affect the economy of much of the Northwest.

Approximately two-thirds of those interviewed expressed concern about the future of the nuclear power industry. They cited critical articles in the press, particularly from Seattle and other metropolitan areas, as evidence of a growing movement to eliminate nuclear energy in the U.S. that directly threatens local jobs.

Lastly, many Tri-Cities residents expressed concern about the more general issue of the cost of complying with environmental regulations. On one hand, many people believe that the Tri-Cities area could benefit economically from the application of Superfund and RCRA environmental regulations to Hanford. On the other hand, others are aware of the potential economic burden of environmental regulation and compliance. These individuals cited the local costs of compliance with the recent State landfill requirements, which they believe are relevant only to environmental and geologic conditions prevalent in western Washington.

Funding of DOE Projects. The major concerns expressed by community members and local officials about specific economic issues related to the Hanford cleanup are the possible impact on other DOE projects in the area and the assurance of long-term cleanup funding. If DOE assigns all of its Hanford resources to cleanup activities, several individuals wondered whether other DOE projects might be terminated. Also, many expressed the desire to see guaranteed funding for the cleanup for the duration of the project.

Public Education. Virtually all of those interviewed in the Tri-Cities area believe that the primary reason Hanford is a target of criticism is because most people do not understand the types of work conducted there and do not understand and therefore fear the nuclear power industry. They believe that this situation is caused by a lack of accurate information about the issues.

The accurate communication of risk is of foremost concern to most community members. Several people believe that the public has an inaccurate understanding of both the risks posed by past and present activities at the site and the risks posed by various forms of radiation. These individuals believe the media confuses the public by providing inaccurate and incomplete information about risk. Many of those interviewed also believe that some of the more visible Hanford supporters in the Tri-Cities area use the same "scare tactics" in trying to promote their opinions.

To address these problems, virtually all Tri-Cities community members interviewed expressed the desire for a consistent and understandable public education campaign about the Hanford Site to help eliminate many misperceptions and to move debate about many Hanford issues from the political arena to the scientific realm. They believe that an educated press will be better able to educate the public about Hanford and Site cleanup issues. Several individuals expressed a strong interest in applying their experience with and knowledge of Hanford and other nuclear facilities to the development of such educational materials.

Political versus Scientific Decisions. Virtually all of the people interviewed in the Tri-Cities area expressed the belief that most decisions regarding Hanford are motivated by politics rather than science. For example, many stated their displeasure with the manner in which Congress made the decision to continue high-level waste repository site characterization only at the proposed Nevada

location. Several people also noted that politically-based decisions about Hanford are not uncommon. They believe most of the country reacts to Hanford in an emotional manner that clouds the issues to which scientific analysis should be applied. Moreover, most of the Tri-Cities residents and officials who expressed this view also stated their desire to see this situation changed through public education, although they recognized that changing long-standing perceptions of Hanford will be extremely difficult.

DOE Credibility. Many people interviewed in the Tri-Cities area stated that, in general, their trust of DOE extends only to representatives of DOE-Richland, not to DOE Headquarters in Washington, D.C. Some local officials expressed doubt about DOE Headquarters' willingness to work effectively and constructively with local governments, citing as an example the lack of DOE funding for local activities related to the BWIP project. These individuals realize that, because the local economy relies on Hanford, they are somewhat hindered in their ability to protest what they perceive as political "game-playing" by DOE Headquarters.

Many of the individuals interviewed expressed the view that DOE's historical reluctance to release information does not give the Department strong credibility in the region. Moreover, several people believe that the information DOE provides about Hanford activities is not always complete. Some people stated that DOE has told the local community for years that Hanford activities do not present environmental problems, but that several people have requested that DOE release environmental monitoring and other data in order to assess for themselves whether this is true.

A small number of community members reiterated the DOE credibility issue in expressing displeasure at the way in which "whistleblowers" who report controversial practices are treated. These community members believe that there is an intimidation factor that keeps many people from expressing doubt or displeasure about activities at Hanford for fear of reprisals on the job or social ostracism. Many individuals cited the recent example of two whistleblowers employed at Hanford, whom a Congressional Subcommittee later determined had been treated unfairly by their employer.

News Media. Almost all of those interviewed in the Tri-Cities area have a poor opinion of the news media. Many believe that media at all levels -- local, state, and national -- do not provide solid coverage of Hanford, are poorly informed, and are a major factor in contributing to Hanford's inaccurate and negative reputation. Many also appear to take the view that the news media have done all the damage possible to the way in which Hanford is viewed by the rest of the nation.

Health and Environmental Concerns. Few of those interviewed in the Tri-Cities area believe that contamination at Hanford presents an immediate threat to public health or the environment. Many local residents, who have lived with Hanford's activities for more than 40 years, appear to be both familiar and comfortable with activities at the Site. They were careful, however, to point out that they do not believe all residents in the region share their view. They cited the downwinders as an example of a group with a very different view. Several residents cited dangers from pesticide use on farms and radon in Spokane area homes as examples of dangers that pose a more immediate threat than the contamination problems at Hanford.

Many individuals expressed concern that the County Health Department, to which they often refer questions about Hanford, has no authority over, and therefore no information about, activities at Hanford. Additionally, several of those interviewed expressed concern that the Health Department would not be able to determine the extent to which their health may have been adversely impacted by living in close proximity to Hanford.

Some of the people interviewed in the Tri-Cities area also expressed concern about potential groundwater contamination. Those familiar with the Tri-Cities' groundwater situation believe that the potential fate of contaminants cannot be readily determined because scientists do not fully understand groundwater flow patterns in the area. The City of Richland believes its drinking water wells near the 1100 Area to be safe from contaminants. The City injects water from the Columbia River into the ground near the City's intake pumps to reverse the direction of normal groundwater flow, thus reducing the potential for contaminants in groundwater near the area to get into the public water supply. Several Tri-Cities residents observed that local agriculture, which relies primarily on groundwater resources, could be adversely affected by groundwater contamination.

Hanford's Role in Statewide Waste Disposal. Many Tri-Cities leaders and community members stated that they do not want to see eastern Washington become the "dumping ground" for wastes generated in western Washington and outside the State. While these individuals acknowledge the current waste problem at Hanford and the need to address it, they do not believe that the extent of the existing problem alone justifies converting the area into a large-scale waste disposal site. A number of people also noted that, if scientific factors determined Hanford to be the most suitable location for a waste dump, they would not be opposed to it. This issue was raised as another example of the need for rational decision-making about issues related to Hanford and the nuclear industry.

Transportation and Emergency Response. The primary concern expressed by those interviewed about transportation is the ability of the region to respond effectively to a transportation accident involving hazardous or radioactive materials. Many of the individuals interviewed said that the transportation corridors along Interstate 84, the railroads, and the Columbia River present opportunities for accidents that could have a serious adverse effect on the entire region. Several Tri-Cities residents interviewed are concerned that the workers and managers involved in packaging and transporting materials to Hanford lack technical expertise about proper packaging and shipping techniques. They believe this could increase the likelihood of releases of hazardous and radioactive wastes.

Many individuals stated that the region has inadequate funding for emergency preparedness planning and training, and no coordinated regional emergency response team exists. They believe that this lack of emergency preparedness increases the possibility that transportation accidents could pose a major risk to the region.

Professional Respect. Many Tri-Cities residents and local officials expressed confidence in the knowledge and expertise of the scientists working at Hanford, saying that they trust these scientists to conduct investigations and cleanups that are technically sound and protective of the environment and public health. These individuals also noted that, just as they do not expect someone who is not an expert in their particular field to tell them what to do, they do not believe that they have the expertise to supervise the Hanford scientists.

Image of the Tri-Cities. According to some of those interviewed, residents of the Tri-Cities area are concerned that the rest of the State, and perhaps the rest of the country, views Hanford only as a radioactive waste site and the Tri-Cities residents as "blindly" supportive of Hanford. They hope to promote the other activities in the region, such as agriculture, tourism, and the wine industry, through economic diversification and public education.

Radioactive versus Hazardous Wastes. Most of the Tri-Cities residents interviewed appear to make little distinction between radioactive and hazardous wastes. Many individuals stated that they are more familiar with radioactive waste than hazardous waste issues because of their general understanding of activities at Hanford. Some community members noted that they are familiar with hazardous waste issues because of agricultural or small business activities, rather than Hanford activities, but that their knowledge is fairly limited.

D.2. Native American Tribes

Past Involvement

In 1855, the U.S. government signed treaties with four Native American Tribes residing in the Northwest: the Warm Springs, Nez Perce, Umatilla, and Yakima. Under the terms of the treaties, the Tribes reserved certain rights to use lands ceded in the Treaty. The Hanford Reservation and surrounding area are part of these lands ceded to the U.S. government by the Indian Nations in 1855. Until Hanford was created, the Tribes continued to use the ceded lands. Since access to these areas was limited because of activities at Hanford, the Tribes have maintained an interest in the preservation of sacred areas, including burial mounds, village sites, and Gable Butte, where religious ceremonies took place.

During the BWIP program, the Tribes received funding from DOE because of the potential effect of the program on the ceded lands. The Tribes conducted projects to evaluate and inform their members of potential effects of BWIP. For example, some of the Umatillas' programs included environmental monitoring, sociocultural and demographic research and projections, on-site monitoring of BWIP activities, and analyses of transportation issues.

Issues of Concern

The concerns presented by Native American representatives interviewed in the preparation of this Community Relations Plan are presented in the sections that follow.

Sovereign Governments. Representatives from the Yakima Nation, the Confederated Tribes of the Umatilla Indian Reservation, and the Columbia River Inter-Tribal Fish Commission stated that their primary concern about activities at Hanford is that DOE and other agencies recognize the Tribes' status as sovereign governments and involve them accordingly in the Superfund process. Tribal representatives stated that the Tribes' level of involvement should be the same as that accorded to other governments potentially affected by Hanford (i.e., the State of Oregon). According to those interviewed, the Tribes want to be included in all aspects of the investigation and cleanup process, and assert that this right was provided to them under the 1855 treaties and therefore must be upheld. Tribal representatives observed that, during the BWIP process, DOE consulted with and involved them in a satisfactory manner. One Tribal representative noted, however, that since the decision was made to site the repository in Nevada, DOE has seemingly "forgotten" how to involve the Tribes.

Hanford Site Lands. Tribal representatives stated that Hanford Site contains several areas that the Tribes consider sacred, including burial grounds and religious sites (i.e., Gable Mountain and Gable Butte). In addition, Tribal representatives noted that the Hanford Reach of the Columbia River was a traditional gathering place and spiritual center for the many Tribes that once lived in the area. According to those interviewed, while the Tribes have suspended their traditional activities since Hanford was acquired by the Department of Defense in 1943, they have never lost sight of their goal to resume these activities. Furthermore, all of the Tribal representatives expressed concern that proposed

investigation and cleanup activities might endanger sacred places, important archaeological sites, and traditional food gathering sites. The Tribal representatives stated they would like to be informed before any activity is undertaken at Hanford, for any reason. A representative from the Umatilla Reservation noted that federal law requires that "cultural resource surveys" be performed prior to ground-breaking activities, and that the Tribes must have an active role in any such activities.

Funding. Tribal representatives noted that, while it is important for them to participate in all activities related to Hanford, they have limited resources and will be unable to participate unless additional funds are made available to them. These individuals praised the BWIP project for the funding provisions that allowed the Tribes to develop programs to analyze fully the potential impacts of the repository on their reservations and other sacred places. Conversely, they criticized DOE's Dose Reconstruction Project because it does not provide funding for tribal representation, although they believe that tribal participation is a necessary component of the project. One individual expressed frustration that the Tribes have to obtain funding to participate in the effort to address a problem that was created by DOE. Tribal representatives added that they also will need funding to comply with the Emergency Preparedness Planning and Community Right-to-Know provisions of Title III of SARA. These individuals expressed concern that, if an emergency were to occur at Hanford, the Tribes would be unable to respond appropriately because they lack adequate training and resources.

Threat to the Columbia River. The Columbia River also plays a vital role in many of the Tribes' activities because of its importance as a fishing and irrigation resource. All of the Tribal representatives interviewed expressed concern that radioactive and industrial contamination in the River could endanger salmon and bottom fish that reside there. Tribal representatives noted that this concern has far-reaching effects, because of the financial impacts that could result if exports of fish and agricultural products from the region to Asian countries are perceived to be contaminated. The Tribes are concerned that even though the River is not contaminated, the perception of contamination associated with Hanford could lead people from outside the region to believe that the Columbia has been adversely affected.

Transportation of Hazardous or Radioactive Wastes. The Umatilla Tribal representative identified this issue as being one of their greatest concerns. He pointed out that both I-84 and the railroad converge on their reservation at a primary population point. In addition, the Umatilla are concerned about the potential for spills on the ceded lands and lands for which they have retained the rights to graze, fish, and otherwise use. Noting that this concern was more pronounced when Hanford was being considered as a possible site for the high-level nuclear waste repository, the Tribal representative stated that it is still important during the cleanup of wastes, which may be transported off-site.

Environmental Contamination. Tribal representatives expressed concern that airborne contaminants, as well as soil and groundwater contamination, could reach their reservations. These individuals stated that Native American culture teaches that the Tribes have been granted use of the Earth by the Creator, and that they have a responsibility to the Creator to maintain it. Therefore, Tribal representatives stated that they believe DOE should take responsibility for maintaining the land on behalf of the Native American people.

D.3. Spokane and the Western Regions of Washington and Oregon

The individuals interviewed in the preparation of this Plan represented many state agencies and commissions, community and environmental organizations, and elected officials, all of whom have been involved with or expressed interest in Hanford. (See Appendix D for a complete list of these groups and individuals.) Several of these organizations were created specifically to address issues at Hanford. For purposes of describing community involvement at Hanford, the organizations will be grouped as follows: State Commissions and Agencies; the Northwest Citizens Forum on Defense Waste; and Environmental and Community Groups.

Past Involvement

State Commissions and Agencies. Both Oregon and Washington have established governor-appointed public advisory boards to address issues related to nuclear waste at Hanford. In Washington, the Legislature established the Nuclear Waste Board, which has been given the charge of proposing State policy on nuclear waste issues. The Board is composed of eight Legislators, the heads of State agencies, and a citizen Chairperson appointed by the Governor. Ecology provides staff and administrative support for the Board. DOE initially funded the Board through the Nuclear Waste Policy Act. This Act provided money for studies and public involvement to States potentially affected by the nuclear waste repository.

The Washington Nuclear Waste Advisory Council consists of 15 members appointed by the Governor. It advises the Nuclear Waste Board about nuclear waste issues and provides opportunities for public education and involvement regarding nuclear waste issues. The Council also advised the Board regarding the State's position on the possible siting of the high-level nuclear waste repository at Hanford. It organized several public workshops on the issue, and serves as the liaison to the Oregon Nuclear Waste Committee.

Following the passage of the Nuclear Waste Policy Act in 1982, DOE selected Hanford as one of 14 sites nationwide to be considered for the high-level nuclear waste repository. Public involvement with the program increased in May 1986, when Hanford was selected as one of three western sites selected for final site characterization, while the site selection process for an eastern repository was indefinitely postponed. Residents of the Northwest strongly opposed the selection process and challenged DOE's decisions. The State of Washington filed multiple lawsuits against DOE, contesting the decision process and Hanford's selection as a possible repository site. Opposition continued throughout the characterization of the three remaining sites until December 1987, when Congress passed legislation cancelling the selection process and BWIP, and moving any further characterization work to a single site in Nevada.

The State of Oregon developed a structure similar to Washington's for addressing Hanford-related issues. The Oregon Hanford Waste Board is a body appointed by the Governor to set State policy regarding Hanford activities, particularly the siting of the high-level radioactive waste repository and transportation of nuclear waste and materials through Oregon. The Board's staff and activities initially were funded by a grant from DOE in the same way that DOE funded Washington's Nuclear Waste Board. The source of continued funding has yet to be determined. Presently, the Board's efforts focus on the safety of transporting transuranic wastes through Oregon to DOE's Waste Isolation Pilot Project (WIPP) in New Mexico.

In addition, Oregon has established a Hanford Advisory Committee that consists of 17 members appointed by the Governor. Initially, the Committee advised the Board on the repository issue, but

since Congress' 1987 decision to focus all further site characterization efforts on the proposed site in Nevada, its activities have centered on responding to local concerns about the safety of transporting nuclear wastes through Oregon.

Northwest Citizens Forum on Defense Wastes. DOE established the Citizens Forum in February 1986 to conduct an independent public review of the Hanford Defense Waste Environmental Impact Statement (EIS). The draft EIS was issued by DOE in 1986 to address the proposed disposal of radioactive defense wastes at Hanford. According to one of the Forum's members interviewed for this Plan, the Forum represented a broad range of philosophies and interests, but nonetheless was able to reach a consensus in its evaluation of the EIS. The Forum held numerous workshops and public meetings on the EIS, and produced a report containing the Forum's comments as well as the comments of individual members. The comments were incorporated into the final EIS.

Environmental and Community Groups. The environmental and community groups interviewed for this Plan included the Sierra Club, Hanford Education Action League, Greenpeace, Citizens for a Sane Nuclear Policy (known simply as SANE), the Oregon Environmental Council, the Northwest Environmental Advocates, and other groups whose work included some interest or involvement in Hanford. Some of these groups, such as the Oregon Hanford Oversight Committee, were established for the sole purpose of organizing community opposition to the proposed nuclear waste repository. All of the organizations interviewed had been involved in activities related to the proposed repository: conducting public workshops and demonstrations; staffing information tables; and presenting meetings and other activities to inform the community about the potential impacts of siting the repository at Hanford. The Oregon Hanford Oversight Committee (OHOC) organized "Hanford Awareness Week" in both 1986 and 1987, during which times OHOC members appeared on television and radio shows, staffed information booths, and conducted petition drives addressing the proposed repository, defense waste, and N Reactor issues. During the 1986 Senate race, several groups organized the "Hands Across the Columbia" event, in which more than 1,000 people linked hands across the Interstate-205 bridge that spans the Columbia near Portland to demonstrate Washington and Oregon's unified opposition to siting the repository at Hanford.

A number of these organizations disbanded or turned their attention to other issues after Congress' decision to focus further characterization on Nevada as the repository site. Some organizations have been involved in activities such as opposing the production of plutonium, resisting the proposed conversion of the incomplete WNP-1 reactor to a tritium production facility, and opposing the continuation of any defense-related activities at Hanford. One organization, Heart of America Northwest, recently established the Hanford Task Force to pursue Congressional action to ensure continued funding of the cleanup at Hanford.

Issues of Concern

During interviews conducted throughout the Northwest in May and June 1988, individuals and representatives of the groups and agencies discussed above expressed their concerns about the cleanup at Hanford. The following section describes the issues that arose most frequently during the interviews in these communities.

DOE Credibility. Virtually all of the individuals interviewed stated that DOE suffers from a lack of credibility in western Washington and Oregon. These individuals stated that they believe much of the information about the defense-related activities that have occurred at Hanford over the past 40 years has been withheld from the public; many have concluded that DOE withheld this information for security reasons. One Washington State legislator said that, in his view, the public does not believe that

DOE has released adequate information about the activities that have taken place at Hanford, nor about the potential impacts of activities on human health or the environment. A representative of an environmental organization stated that DOE has invoked the Atomic Energy Act on several occasions to prevent disclosing information about Hanford.

Several community members mentioned specific recent events and disclosures that they believe have further eroded DOE's credibility in the eyes of the public. They noted the conflict over DOE's unwillingness to comply with environmental laws, citing as an example the State of Washington's attempts to enforce state and federal hazardous waste disposal laws. They stated that incidents of this nature lead them to believe that DOE is less interested than the State in protecting public health and the environment.

Some of the western Washington and Oregon residents and officials interviewed stated that the public's skepticism about the credibility of information received from DOE has increased because of recent media coverage of events at Hanford. One example of this type of information was the Tri-City Herald coverage of a recent incident in which DOE reported that stabilized single-shell tanks had leaked radioactive liquid. These individuals stated that previous information from DOE had led them to believe that the stabilized tanks could not leak.

Almost all western region residents interviewed for this Plan stated that public distrust of DOE increased because of the political activities that occurred related to siting the high-level nuclear waste repository. A number of people interviewed stated that the citizens of Washington, Idaho, and Oregon resented what they viewed as strong pressure on Congress from DOE to site the repository at Hanford, despite the fact that DOE's methodology for ranking potential repository sites resulted in Hanford's being ranked last among five candidates initially under consideration. Residents of the Northwest perceived that DOE was making its decisions on political rather than scientific grounds. They believe that DOE had decided that Hanford should be selected for the repository site because it already stores large volumes of radioactive waste underground, and because DOE officials believed that the State wanted the repository. A public referendum in November 1986, however, showed that 84 percent of the State of Washington's voters supported the State's approach to opposing DOE's process for siting the repository in their state. Several people said they believe that Congress' decision in December 1987 to discontinue all studies at Hanford related to the repository, and to continue only the characterization efforts at Yucca Mountain, Nevada, was driven by political considerations rather than scientific ones.

According to several Washington and Oregon State officials and members of environmental organizations, however, the situation has improved under the current Manager of DOE-Richland, who is perceived to be more forthcoming with information. For example, several people stated that DOE's response to Freedom of Information Act requests has improved. In addition, several people interviewed for this Plan noted that the Citizens Forum established by DOE to evaluate the Defense Waste Environmental Impact Statement (EIS) was an open public involvement process. These individuals noted that previous public involvement activities offered no real opportunity for the public to have an impact on decisions. In contrast, several of the individuals interviewed acknowledged that the Citizens Forum was different, citing DOE's cooperation with and financial support of the group, and the fact that the Forum's membership included representatives of a broad range of viewpoints about Hanford. The Citizens Forum was not supported by all who were interviewed, however. Several environmental group representatives criticized the Forum for not including representatives of groups that were more outspoken in their opposition to the defense waste disposal plans. The individuals who expressed this viewpoint appear to believe that DOE intentionally selected Forum members who would be generally supportive of the EIS.

Long-Term Funding for Cleanup. The community members interviewed for this Plan expressed concern that adequate funding be secured by DOE for the duration of cleanup efforts, which may require 30 to 50 years to complete. Virtually all of those interviewed stated that they would like Congressional assurance that DOE's budget will provide funding specifically for the Hanford cleanup through its completion. For the past nine months, the Seattle-based Heart of America Northwest Hanford Task Force has focused its efforts on the funding issue, and is working closely with the Northwest Congressional delegation to obtain additional appropriations in DOE's budget for Fiscal Year 1989 to allow an accelerated cleanup schedule. Several people expressed concern that competition with DOE facilities in South Carolina, Tennessee, and other locations for cleanup funds could reduce the funds available for Hanford cleanup. Others believed that there is no commitment within DOE to clean up Hanford and, in several years, DOE's agenda will change and cleanup money no longer will be available.

Risks Posed by Wastes at Hanford. A large percentage of the individuals from western Washington and Oregon interviewed for this Plan expressed concern about the risks to human health and the environment presented by the radioactive and chemical wastes at Hanford. Most of those interviewed consistently displayed general knowledge about how wastes are stored at Hanford, and many people interviewed spoke of specific concerns about single- or double-shell tanks, retrievably-stored wastes, and disposal areas near the reactors in the 100 Area. Several representatives of environmental groups and the Oregon Congressional delegation expressed concern that no satisfactory solutions had been proposed for the leaking single-shell tanks.

Every person interviewed in Oregon and some of those interviewed in Washington expressed concern about the potential contamination of both groundwater and the Columbia River. Many of these individuals stated that they consider the Columbia to be the major basis of the economic well-being of both Oregon and Washington. These individuals stated that the Columbia is important for its irrigation, transportation, fish and wildlife, and recreational values, and expressed concern that actual or perceived contamination could adversely impact these and many other resources and industries, including exports of agricultural products such as wine and wheat. Moreover, they believe that contaminated groundwater could adversely impact agricultural resources in Washington and Oregon.

Most of the people interviewed in Seattle and Spokane also expressed concern about the exposure of those who live downwind of Hanford to air emissions of toxic and radioactive materials. They stated that information released recently by DOE or obtained through the Freedom of Information Act revealed numerous accidental and intentional releases of radioactive iodine during the early years of Hanford operations. These individuals believed that DOE's Dose Reconstruction Project is an important attempt to determine the possible effects on human health and the environment from such exposures, but expressed dissatisfaction with the composition of the Project's steering committee, and were skeptical that adequate information exists to reconstruct past events or to draw significant conclusions regarding cause and effect.

Transportation of nuclear or hazardous materials and wastes is also of concern to many people in Washington and Oregon, who assert that few counties along the Interstate-84 corridor are adequately prepared to respond to accidents involving those materials. The Governor's Oregon Hanford Waste Board focuses its efforts specifically on transportation of nuclear wastes and materials through Oregon along Interstate 84.

Individuals interviewed for this Plan expressed concern about potential health effects caused by the wastes at Hanford. These concerns included possible health effects from radiation doses received from ingesting contaminated River water during the early 1960s, when several spills occurred that

released radioactive waste water from disposal ponds into the River. Representatives of one environmental group stated that they believe that the radiation received through 1963 from eating Columbia River fish and from living near the river exceeded by ten times the health standards set by the Atomic Energy Commission. Most individuals stated, however, that they believe the public is not well informed about the risks posed by the current activities and wastes at Hanford. They assert that DOE should provide the public with complete information on the amounts and concentrations of wastes located at the Hanford Site, the currently-known patterns of groundwater flow, and any relevant health effect thresholds and regulatory standards for these materials.

Economic Viability of the Tri-Cities Area. According to recent media coverage throughout the Northwest, the relegation of the N Reactor to cold standby status may result directly and indirectly in the loss of as many as 6,000 jobs in the Tri-Cities area. Residents in western Washington, Spokane, and Oregon expressed concern that the area's economic livelihood may not recover from this loss unless immediate efforts are taken to diversify the Tri-Cities economy. Most of those interviewed believe economic diversification to be the only solution to the area's employment problems. In addition, interviewees in western Washington -- and Seattle in particular -- expressed a financial interest in the economic condition of the Tri-Cities area. They stated that many banks outside the Tri-Cities area have significant investments at stake in mortgages, loans, and other investments in the Tri-Cities area, which they stand to lose if the regional economy experiences a significant decline.

A large number of those interviewed stated the belief that hazardous waste engineering firms and related service industries should take advantage of the region's well-educated and highly-skilled work force, along with the opportunity that the cleanup affords for research and development of new hazardous waste technologies. Many people believe that hazardous waste cleanup companies could market new technologies from their Tri-Cities offices. In this way, the cleanup may represent an excellent opportunity for the area to diversify its economic base, and move away from dependence on nuclear programs.

Public Involvement Process. Virtually every person interviewed stated that the public involvement process at Hanford must be open and must afford the public genuine opportunities for commenting on and influencing decisions that are made regarding the cleanup. They added that, in the absence of a sincere effort on DOE's part, the Department's credibility problem will detract from any public involvement efforts that DOE may conduct. Most people interviewed suggested that the community relations program can be credible only if it is implemented by some combination of the three agencies (Ecology, EPA, and DOE) conducting and overseeing the cleanup.

Many community members stated that the agreement between the three parties should specify that any community relations activities for Hanford be conducted under the auspices of EPA and/or Ecology. Most people interviewed believed that the State enjoys greater public trust than either federal agency, although EPA is generally viewed as more credible than DOE. Several members of environmental groups stated that they would participate in the public involvement process regardless of who conducted it, but added that they will believe the public is being given a role in the cleanup decision only if the community relations program is conducted by Ecology or EPA. Others believed that community relations activities should be conducted jointly by the three parties, and that all written materials should be produced cooperatively and bear the logos of Ecology, EPA, and DOE. Many of the people interviewed suggested that DOE provide unrestricted grants, similar to those provided by the public involvement program of the Nuclear Waste Policy Act, to Ecology and/or EPA to administer the community relations program.

Most of the people interviewed stated that the public review and comment periods should not be limited to the draft Feasibility Study (FS), as required by CERCLA. To demonstrate the open nature of the community relations program, community members stated that DOE should allow access to all technical documents, including work plans and sampling plans. One individual noted that community comments will be more meaningful and substantive if they are based on all available technical information. He expressed dissatisfaction with the public comment process used by most government agencies, which involves soliciting public comment on a proposed plan of action. This individual believes that the public should be allowed the opportunity to comment on the key documents on which the proposed plan is based. In addition, every person interviewed expressed interest in reviewing the draft Community Relations Plan, and stated that DOE should accept public comment on the Plan.

Approximately three-quarters of the individuals interviewed for this Plan suggested that DOE and EPA establish a public review board or panel, perhaps similar to the Defense Waste Citizens Forum, to provide citizen input throughout the cleanup. Most suggested that the panel be composed of individuals representing the full range of perspectives on Hanford, and include both technical and non-technical members, supporters and critics. The individuals who made this suggestion also believe that selection of such a panel's membership must be conducted by an outside, unbiased agency or group; suggestions included the National Academy of Sciences, the Washington Nuclear Waste Board, and a public relations firm such as the one that selected the members of the Defense Waste Citizens Forum.

In addition, some community members believe that unrestricted funding must be available to the public for technical assistance in evaluating documents related to the cleanup. They cited the BWIP program as a model for providing assistance to those groups affected by Hanford. Most persons interviewed believed that the EPA Technical Assistance Grant (TAG) program grants would be insufficient for monitoring Hanford's cleanup.

Agency Roles and Responsibilities. Several of the individuals interviewed expressed concern about the enforceability of the agreement negotiated between DOE, EPA, and Ecology. Several representatives of environmental organizations stated they were skeptical that Ecology and EPA could force DOE to comply with the agreement or with CERCLA and RCRA regulations. These individuals referred to Ecology's pending suit against DOE for non-payment of RCRA fines as an example of what could happen with DOE's cleanup efforts. As with the public involvement program, some community members stated they would be more confident that Hanford would be cleaned up properly if the State of Washington had greater authority in the matter and if there were some assurance that DOE was complying with state environmental laws. Many of the persons interviewed stated that there should be an opportunity for meaningful public comment on the proposed Action Plan. They stated that the "listening post" meetings held in May 1988 to discuss the Action Plan were poorly publicized and informational materials were not available to allow community members to prepare adequately for the meetings.

A smaller but significant number of interviewees expressed a desire to see the three parties cooperate and present a unified approach to the cleanup. They stated that dissenting viewpoints or contradictory information from the agencies will not promote public confidence in the cleanup plans. Many individuals noted that ongoing disputes between Ecology and DOE decrease public confidence in the ability of the agencies to work together and present the perception that the agencies have different goals. Some of these individuals also stated that a unified agency approach could decrease the level of public concern about Hanford activities.

Several representatives of environmental groups and Congressmen expressed their support for several pieces of legislation pending in the U.S. House of Representatives Energy and Commerce Committee regarding the Hanford cleanup. The five bills, known together as the "Federal Facility Hazardous Waste Bills" (HR-3785, HR-3784, HR-3782, HR-3781, and HR-3783), would extend and strengthen EPA's oversight and enforcement authorities at federal facility Superfund sites.

Military Use of Hanford. In addition to the facilities that are used for plutonium production and energy research and development, Hanford contains remnants of old U.S. Army facilities. Congress initiated the Defense Environmental Restoration Program (DERP) in 1983 to consider environmental problems created by the military use of land areas within the U.S. The Army Corps of Engineers (Corps) administers the program for the U.S. Department of Defense (DOD), conducting inventories of DOD sites and cleaning up hazardous waste, remaining ordnance, and old structures. The Army had numerous facilities at Hanford, including two Nike missile sites, twenty anti-aircraft facilities, and an ammunition storage facility. It also used Hanford as a location for conducting military exercises. The DERP program has addressed these facilities, but the Corps believes it is possible that some materials or facilities may remain on the site.

The Yakima Firing Center is located immediately northwest of Hanford and is used exclusively for Army training exercises. The Army periodically conducts exercises that are monitored by DOE. Some community members interviewed stated their concerns that protective measures and additional controls should be taken if Army exercises occur during the cleanup to prevent the exercises from interfering with the cleanup.

Political Consensus Building. Several of those interviewed discussed efforts to build a new political consensus between interests on the east and west sides of Washington State. While each person discussing the effort represented different interests, all were unified in their desire to ensure the economic diversity, stability, and vitality of the Tri-Cities area. To this end, many expressed the desire to ensure the long-term funding of the Hanford cleanup as the foundation of economic diversification in the area. Some mentioned that the Heart of America Northwest Hanford Task Force is the beginning of such a political consensus. All those mentioning this consensus expressed a strong desire to see its fruition, and stated that all involved with Hanford should do their utmost to facilitate rather than obstruct the consensus-building process.

APPENDIX E

GLOSSARY OF TERMS

Basalt Waste Isolation Project (BWIP) - Program to study Hanford as a possible location for the high-level nuclear waste repository.

Carbon Tetrachloride - A chlorinated organic solvent used in the plutonium extraction process at the Plutonium Finishing Plant. Carbon tetrachloride is a known human liver carcinogen via inhalation and other ingestion. Other toxic effects include central nervous system damage.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as **Superfund** - The federal statute enacted in 1980 and reauthorized in 1986 that provides the statutory authority for cleanup of hazardous substances that could endanger public health or welfare or the environment.

Chromium - An inorganic element found in the environment in two forms: hexavalent and trivalent. Hexavalent chromium is carcinogenic via inhalation; hexavalent and trivalent chromium are less toxic via ingestion. Hexavalent chromium is a primary contaminant in groundwater beneath the 100 Area at Hanford.

Cold Standby - A condition whereby a reactor is defueled and maintained in a state that will allow the reactor to be restarted, if necessary.

Community Relations Plan (CRP) - A report that assesses and defines a community's informational needs concerning potential hazards posed by conditions at hazardous waste sites. The CRP also encourages and ensures two-way communication between an affected community and the public agency overseeing the site cleanup.

Corps - U.S. Army Corp of Engineers

Corrective Measures Implementation (CMI) - The step in the RCRA past practice process in which a corrective action system is designed and implemented; comparable to the Remedial Design and Remedial Action phases of the CERCLA process.

Corrective Measures Study (CMS) - The step in the RCRA past practice process in which alternatives for a corrective action system are investigated and screened; comparable to the Feasibility Study phase of the CERCLA process.

Crib - An underground structure designed to receive liquid waste that can percolate into the soil directly after traveling to a connected tile field.

Cyanide - An extremely poisonous substance used in the extraction of ores, treatment of metals, and in the manufacture of pharmaceuticals.

DOD - U.S. Department of Defense

DOE - U.S. Department of Energy

Defense Environmental Restoration Program (DERP) - A program initiated by Congress in 1983 to consider environmental problems created by the military use of land areas within the U.S.

Ecology - Washington State Department of Ecology

EPA - U.S. Environmental Protection Agency

Ethylene Glycol - An organic compound used primarily as an anti-freeze. Ethylene glycol is moderately toxic when ingested.

Fast Flux Test Facility (FFTF) Advanced Reactor - A liquid metal test reactor that serves as a test tool for advanced reactor technology. Operations at the FFTF began in April 1982 and have since expanded into other areas, such as fusion research, space power systems, and isotope production.

Feasibility Study (FS) - The step in the CERCLA process in which alternatives for a remedial action system are investigated and screened.

Groundwater - Water which fills the spaces between soil, sand, rock, and gravel particles beneath the Earth's surface. Rain that does not immediately flow to streams and rivers slowly percolates down through the soil to the point of saturation to form groundwater reservoirs. Groundwater flows at a very slow rate, compared to surface water, along gradients which often lead to river systems. If occurring in significant quantities, groundwater can be withdrawn for domestic, industrial, and agricultural purposes.

Iodine - An inorganic chemical produced in the plutonium production reactors at Hanford. Radioactive isotopes of iodine are found in most radioactive waste streams at Hanford.

Isotopes - Any of two or more forms of a chemical element with the same atomic number and nearly identical chemical behavior but different atomic mass and physical properties (e.g., radioactive properties).

Hazard Ranking System (HRS) - A scoring system used by EPA to evaluate potential risks to public health and the environment from releases or threatened releases of hazardous substances. The score is used to determine whether or not to list sites on the National Priorities List.

Lead - A heavy metal used as a gasoline additive, in storage batteries, foil, solder, and construction equipment. Lead can be toxic when ingested or inhaled. Lead can impair nervous system development in children and can cause nervous system damage in adults. Lead is also a reproductive toxin.

National Priorities List (NPL) - U.S. EPA's list of the top priority hazardous waste sites that are eligible for investigation and cleanup under the federal Superfund program.

N Reactor - N Reactor is a dual purpose reactor, generating electricity from its steam by-product in addition to producing plutonium. It is the only plutonium production reactor at Hanford that has operated since 1971, and is still in operation today. It is currently in standby status.

Operable Unit - An operable unit at Hanford is a group of land disposal sites placed together for the purposes of doing a Remedial Investigation/Feasibility Study (RI/FS) and subsequent cleanup actions. The primary criteria for placement of a site into an operable unit include geographic proximity, similarity of waste characteristics and site type, and the possibilities for economies of scale.

Plume - A defined area of groundwater contamination.

Plutonium - A radioactive element used as the primary fuel in nuclear weapons. Plutonium is purified during various production operations at Hanford.

RCRA Facility Assessment (RFA) - The initial RCRA process that determines whether corrective action for a RCRA past practice unit is warranted, or defines the additional data necessary to make this determination; analogous to a CERCLA Preliminary Assessment and Site Investigation.

RCRA Facility Investigation (RFI) - The RCRA process that determines the extent of hazardous waste contamination; analogous to a CERCLA Remedial Investigation.

Record of Decision (ROD) - The CERCLA document that selects the method of remedial action to be implemented at a site after the Feasibility Study/Proposed Plan process has been completed. The ROD is published in the Federal Register.

Remedial Action (RA) - The CERCLA process of remedial action implementation after the investigative steps have been completed, after issuing the Record of Decision, and after the Remedial Design has been completed.

Remedial Design (RD) - The CERCLA process of design for the remedial action alternative that was selected in the Record of Decision.

Remedial Investigation (RI) - The CERCLA process that determines the extent of hazardous substance contamination and includes, as appropriate, treatability investigations. The RI is done in conjunction with the Feasibility Study.

Resource Conservation and Recovery Act (RCRA) - A federal law enacted in 1981 that regulates the generation, transportation, treatment, storage, and disposal of hazardous wastes.

Responsiveness Summary - A summary of oral and/or written public comments received during a comment period on key documents, and agency responses to those comments. The responsiveness summary is especially valuable during the decision process at a site because it highlights community concerns about the proposed decision.

Strontium 90 - A highly radioactive isotope common in most radioactive waste streams at Hanford.

Sulfuric Acid - A highly corrosive inorganic acid used in various production processes at Hanford.

Superfund - The common name used for the Comprehensive Environmental Response, Compensation, and Liability Act, also referred to as the Trust Fund.

Superfund Amendments and Reauthorization Act of 1986 (SARA) - The reauthorization of the CERCLA statute enacted by Congress in December 1986.

Transuranic Waste - Waste contaminated with long-lived transuranic elements in concentrations within a specified range established by DOE, EPA, and the Nuclear Regulatory Commission. These are elements shown above uranium on the chemistry periodic table, such as plutonium, americium, and neptunium.

Treatment, Storage, and Disposal (TSD) Unit - A treatment, storage, or disposal unit that is required to be permitted and/or closed pursuant to RCRA requirements as determined in the Action Plan.

Tritium - A radioactive isotope of hydrogen used in nuclear weapons to increase the efficiency of the nuclear reaction.

Uranium - A naturally-occurring radioactive element existing in all radioactive production operations and radioactive waste streams at Hanford. The chemical toxicity of uranium is generally more of a health concern than the radioactive nature of the element.

Washington State Hazardous Waste Management Act - A state program, commonly referred to as the State Dangerous Waste Program, which regulates the generation, treatment, storage and/or disposal of hazardous wastes in cooperation with RCRA.